

# Characteristics of Physicians Who Frequently Act as Expert Witnesses in Neurologic Birth Injury Litigation

Aaron S. Kesselheim, MD, JD, and David M. Studdert, LLB, ScD

**OBJECTIVE:** Much debate surrounds physicians who testify in controversial types of medical malpractice litigation, but little is known about them. We sought to describe characteristics of physicians who frequently act as expert witnesses in neurologic birth injury litigation.

**METHODS:** Using jury verdict reports, we identified 827 cases between 1990 and 2005 involving birth-related neurologic injury to a child. Frequent expert witnesses were defined as those associated with more than 10 cases. From the verdict reports and other public data sources, we compiled case descriptions (injury type and severity, legal outcomes) and characteristics of the frequent witnesses (age, gender, board certification, academic publication record). We analyzed these characteristics by comparing witnesses with each other (plaintiff compared with defendant) and with nationally representative data.

**RESULTS:** Seventy-one frequent witnesses participated in 738 cases (89% of the sample), which paid \$2.9 billion in compensation. Most (56 of 71) testified for one side in at least three fourths of cases, and 40% of cases were located outside the witnesses' home states. Frequent plaintiff witnesses had a higher median annual case rate than their defendant counterparts (2.9 compared with 1.9 cases,  $P=.002$ ). They were also older (57.2 compared with 50.8 years,  $P=.007$ ), less likely to have subspecialty board certification (38% compared with 95%,  $P<.001$ ), and had fewer academic publications (5.0 compared with 53.5,  $P=.002$ ).

*From Brigham and Women's Hospital and the Harvard School of Public Health, Boston, Massachusetts.*

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*Corresponding author: Dr. Kesselheim, Brigham and Women's Hospital, Division of Pharmacoepidemiology and Pharmacoeconomics, 1620 Tremont Street, Suite 3030, Boston, MA 02120; e-mail: akesselheim@partners.org.*

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**CONCLUSION:** A small cadre of physicians testifies in most neurologic birth injury litigation, and witnesses tend to act consistently for one side. Plaintiff witnesses have fewer markers of expertise than defendant witnesses. These descriptive and analytical findings may reflect suboptimal expertise or bias in physician expert testimony.

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**LEVEL OF EVIDENCE: II-3**

Physicians who act as expert witnesses play a central role in medical malpractice litigation.<sup>1,2</sup> They comment on prevailing standards of care, whether those standards have been violated, and whether the care in question caused the plaintiff's injury. Controversy has long surrounded physician experts,<sup>3,4</sup> especially those who devote substantial time to the work and are paid handsomely for it.<sup>5</sup>

A common charge from the medical community is that some physicians behave as “hired guns,” presenting testimony that supports plaintiffs' allegations at the expense of clinical and scientific evidence.<sup>6–10</sup> Consumer advocates and plaintiffs' attorneys, on the other hand, worry that professional allegiances obstruct candid testimony about medical errors.<sup>11,12</sup> Poor testimony on the plaintiffs' side may increase the volume and cost of inappropriate malpractice litigation; on the defendants' side, it may prevent worthy patients from receiving compensation.

The role of a physician expert witness tends to be most controversial where issues of causation and the appropriate standards of care are hotly disputed or lack clarity. Litigation over neurologic afflictions of newborn infants, such as cerebral palsy and brachial plexus injuries, is one such area.<sup>13,14</sup> Cerebral palsy claims, in particular, remain quite common and are among the costliest types of malpractice lawsuits.<sup>15</sup> Yet, since the 1980s, leading pediatric neuroepidemi-



ologists have argued that many such injuries can be traced to hypoxic-ischemic insults<sup>16,17</sup> and other unavoidable trauma<sup>18</sup> that occur in utero, rather than during the intrapartum period. Commentators have contended that courts perform poorly in evaluating the clinical and epidemiologic evidence in this area.<sup>19</sup>

Using jury verdict data, we identified physicians who frequently acted as expert witnesses in neurologic birth injury litigation between 1990 and 2005. We examined characteristics of the physicians and the cases in which they testified. Our goal was to shed light on the identity of this group of physicians.

## MATERIALS AND METHODS

We used an electronic database of jury verdict reports.<sup>20</sup> The database consisted of reports compiled by 46 different jury verdict publishers covering 34 states and the District of Columbia. The publishers, which included the VerdictSearch California Reporter, the Florida Jury Verdict Reporter, and the New Jersey Jury Verdict Review & Analysis, are private companies that specialize in summarizing state court decisions in all types of civil litigation.<sup>21</sup> The reports detail the case facts and legal outcomes, as well as plaintiff and defendant names, verdict dates, court locations, litigants' arguments, and the names and home states of the expert witnesses called by both sides. In addition to judge and jury verdicts, the reporters publish results from arbitration hearings and confidential settlements.

The publishers use a variety of approaches to identify cases and collate information on them, including periodic reviews of court dockets, surveys of attorneys involved in the litigation, direct observation of trials, and news and wire reports. Before finalizing reports, the publishers generally attempt to verify their accuracy by circulating drafts to the attorneys involved. The reports are used widely by attorneys and insurers for case evaluation and litigation strategy and have served as the basis for previous studies of litigation.<sup>22–24</sup>

Our search of the database (search term: “medical malpractice and obstet! and neur! or nerv! or cerebral”) identified 1,187 reports of cases closed between January 1, 1990, and September 1, 2005. Elimination of duplicate reports and cases that did not involve allegations of birth-related neurologic injury to a newborn infant left 827 neurologic birth injury cases.

We reviewed the expert witnesses named in these neurologic birth injury cases. Any physician listed as an expert witness in more than 10 cases was classified as a “frequent witness.” To investigate the involve-

ment of frequent witnesses in all types of litigation, we ran a second search of the database, querying by each witness's name to identify any nonneurologic birth injury cases in which he or she was listed as an expert during the study period.

We reviewed the reports of neurologic birth injury cases that involved one or more frequent witnesses to ascertain each witness's state of origin, the date and location of the decision, the mode of resolution (verdict, arbitration, settlement), the litigation outcome, and the compensation amount (if any). We classified the alleged injuries by type (cerebral palsy, brachial plexus injury, fetal demise, other) and, for cerebral palsies, by their severity (low/moderate or high). Low/moderate severity involved mild cognitive deficits or single-limb motor abnormalities. High-severity injuries included multisystem neurologic defects and/or motor abnormalities involving more than one limb.

To evaluate the relationship between the litigation side for which the expert witness testified (plaintiff or defendant) and the location of the case (outside a witness's home state compared with inside a witness's home state), we used a generalized estimating equation which corrected standard errors for clustering at the level of the individual witness.

We used several data sources to determine characteristics of frequent witnesses. First, we searched their names in the American Medical Association (AMA) DoctorFinder Internet database, an encrypted site containing self-reports of personal and professional characteristics.<sup>25</sup> This information was used to identify the gender, primary medical specialty, clinical practice location, and professional training (medical school, internship, residency, and fellowship) of the frequent witnesses. Second, we searched the American Board of Medical Specialties (ABMS) on-line database for the specialty and subspecialty board certifications of the frequent witnesses.<sup>26</sup> Third, based on a Medline search (complete database, 1966–2005) by name, we assigned a publication count to each frequent witness, excluding any articles unrelated to the clinical specialties of the witnesses. Finally, we searched HealthGrades, a proprietary on-line database that provides a physician's year of graduation from medical school and further information about his or her professional training.<sup>27</sup>

We compiled case statistics for all neurologic birth injury cases in which frequent witnesses testified. We calculated the annual case rates of the witnesses (for neurologic birth injury cases and all cases, respectively) by dividing the relevant case totals by the time period between each witness's first and last cases.



Total compensation costs were based on the present value of awards and payments at the closure date, converted to 2005 dollars.<sup>28</sup>

We conducted two subanalyses focused on “frequent plaintiff witnesses” and “frequent defendant witnesses.” We defined *frequent plaintiff witnesses* as frequent witnesses aligned with plaintiffs in more than 10 neurologic birth injury cases during the study period and with defendants in less than 10. *Frequent defendant witnesses* were frequent witnesses aligned with defendants in more than 10 neurologic birth injury cases during the study period and with plaintiffs in less than 10.

The first subanalysis compared characteristics of the two types of witnesses (overall case rate, age, gender, subspecialty board certification, publication record). Because our data sources provided year of graduation from medical school but not date of birth, we approximated the ages of the witnesses by assuming that they were 25 years old on July 1 of their medical school graduation year. We calculated case-specific age values based on each witness’s age at the date on which his or her cases were closed, and then determined each witness’s average age during the study time period by calculating the average of all the individual case-specific age values.

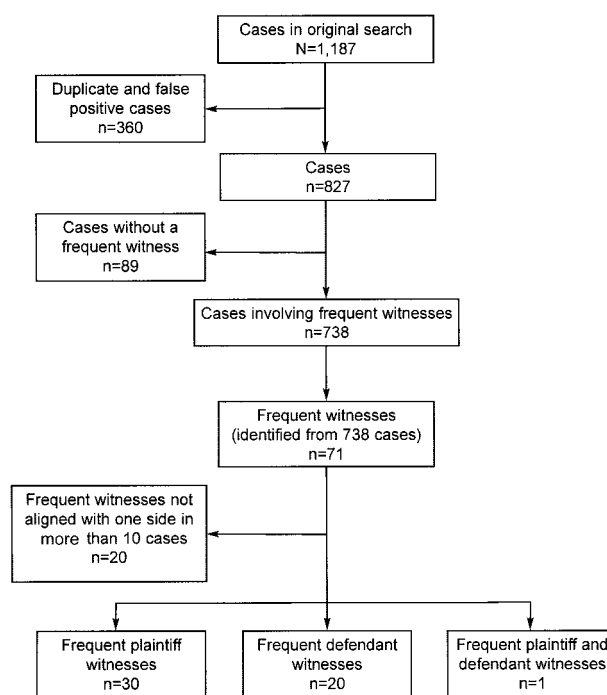
The second subanalysis examined characteristics of witnesses from the dominant specialty of obstetrics-gynecology. We investigated how representative frequent plaintiff and defendant witnesses were of their professional ranks by comparing their age and gender with nationally representative data from the specialty.<sup>29</sup>

All analyses were conducted using Stata 8.2 (StataCorp, College Station, TX). We used Fisher exact tests to compare between subgroups of witnesses with respect to gender and subspecialty board certification status. We used *t* tests to compare subgroups’ age distributions and Wilcoxon rank sum tests to compare case rates and publication rates.

## RESULTS

A total of 71 physicians testified in more than 10 neurologic birth injury cases during the study period and were classified as frequent witnesses. Collectively, they participated in 738 cases—89% of all neurologic birth injury cases identified (Fig. 1).

Eighty percent of the neurologic birth injury cases that involved frequent witnesses were closed in 1995 or later (Table 1). Cerebral palsy was the injury alleged in 57% of the cases, and in most instances the palsy was severe (87%). Seventy-six percent of the cases were decided by court verdict, with 45% (253 of



**Fig. 1.** Derivation of samples of neurologic birth injury cases involving frequent witnesses.

Kesselheim. Characteristics of Frequent Expert Witnesses. *Obstet Gynecol* 2006.

562) of the verdicts favoring the plaintiff. Compensation payments documented in the cases totaled \$2.9 billion.

The frequent witnesses averaged 22.1 neurologic birth injury cases over the study period (range 11–111, median 17) and their neurologic birth injury case rate ranged from 0.9 to 8.6 cases per year. Overall case rates ranged from 1.1 to 9.1 cases per year and tended to be only slightly larger than the neurologic birth injury case rates, suggesting that the witnesses had a fairly specialized scope of involvement in litigation. Table 2 enumerates case totals and rates for the 25 frequent witnesses with the highest neurologic birth injury case totals.

Twenty-one (30%) of the frequent witnesses testified exclusively for one side (13 as plaintiff witnesses and 8 as defendant witnesses). Fifty-six (79%) of them performed three fourths or more of their work for one side (31 as plaintiff witnesses, 25 as defendant witnesses). Only 15 frequent witnesses (21%) approached an even split of their caseload between plaintiffs and defendants. Table 2 also shows the client mix for those frequent witnesses listed.

Considering all instances in which a frequent witness gave testimony in a neurologic birth injury case (N=1,569), 40% occurred in cases located out-



**Table 1. Characteristics of Neurologic Birth Injury Cases Involving Physician Expert Witnesses Who Testified Frequently (1990–2005).**

Characteristics	n	Percent (%)
Total number of cases	738	—
Alleged injury type		
Cerebral palsy	424	57
Brachial plexus injury	181	25
Fetal demise	95	13
Other neurologic injury	38	5
Verdict dates		
1990–1994	151	20
1995–2000	271	37
2001–2005	316	43
Cerebral palsy severity*		
Low/moderate	44	10
Severe	368	87
Case disposition		
Jury/judge verdict	562	76
Plaintiff verdict	253	45
Defendant verdict	309	55
Settled/arbitrated/dismissed	176	24
With remuneration	168	95
No remuneration	8	5
Total case value	\$2.9 billion	
Cerebral palsy cases	\$2.5 billion	
	(\$10.2 million average)	
Brachial plexus injury cases	\$213 million	
	(\$2.0 million average)	

\* Severity could not be determined in 12 cases.

side the witness's home state. The proportion of testimony given out of state was significantly higher among plaintiffs (45%, 95% confidence interval [CI] 41.9–48.4) than defendants (32%, 95% CI 28.2–35.7) ( $P<.001$ ).

There were 30 frequent plaintiff witnesses (more than 10 cases for plaintiff, less than 10 cases for defendant) and 20 frequent defendant witnesses (more than 10 defendant, less than 10 plaintiff). This approach to distinguishing the witnesses by side provided a reasonably clear-cut separation: only one frequent witness was associated with more than 10 neurologic birth injury cases for both sides and was excluded from comparative analysis. The remaining 20 frequent witnesses were not involved in more than 10 cases for one side (Fig. 1).

All plaintiff and defendant witnesses for whom training could be determined held medical doctor (MD) degrees from schools in North America or Mexico (three missing on the plaintiff side, one on the defendant side). Year of graduation ranged from 1949 to 1981 (median 1967) for plaintiff witnesses and from 1946 to 1983 (median 1973) for defendant witnesses

(two missing on the plaintiff side, one on the defendant side). Sixteen of the plaintiff witnesses specialized in obstetrics-gynecology, seven in child neurology, four in physical medicine/rehabilitation, one in pediatrics, one in neurosurgery, and one in radiology. Nine of the defendant witnesses specialized in obstetrics-gynecology, seven in child neurology, three in pediatrics, and one in radiology. All plaintiff and defendant witnesses were board certified in at least one specialty (one missing on the plaintiff side).

The median total case rate was higher for plaintiff witnesses than defendant witnesses (2.9 compared with 1.9 per year,  $P=.002$ ) (Table 3). Plaintiff witnesses were also significantly older (57.2 compared with 50.8 years,  $P=.007$ ). Defendant witnesses, on the other hand, were more likely to have subspecialty board certifications (95% compared with 38%,  $P<.001$ ) and had more academic publications at the median (53.5 compared with 5.0,  $P=.002$ ). Both types of witnesses were predominantly male.

The specialty field of obstetrics-gynecology accounted for 53% of plaintiff witnesses and 45% of defendant witnesses in our sample. Frequent plaintiff witnesses were generally older than their respective colleagues (56.3 compared with 46.5 years,  $P<.001$ ). In addition, although 42% of obstetrician-gynecologists nationwide are female, all of the frequent plaintiff and defendant witnesses from this specialty in the study sample were male (Table 4).

## DISCUSSION

Previous studies have explored how often physicians act as expert witnesses<sup>30</sup> and juror perceptions of them.<sup>31</sup> Our study describes empirically the characteristics of expert witnesses. We identified a group of physicians who devoted substantial time to expert witness work in litigation over alleged neurologic birth injuries, particularly cerebral palsy.

Although our results provide only basic descriptive information, they support several general observations. First, a relatively small group of physician experts testifies in a large portion of neurologic birth injury litigation. Second, these witnesses tend to establish themselves as plaintiff or defense experts, and act fairly consistently for their chosen sides. Third, many witnesses were involved in cases outside their home state; this is particularly true of plaintiff experts. Fourth, male physicians in the latter stages of their careers predominate—at least within obstetrics-gynecology, the dominant specialty in the study sample.

The central policy question to which this study relates is whether appropriate clinical and scientific expertise is being presented and considered in com-





**Table 2. Case Number, Case Rate, and Client Mix for the 25 Most Frequent Witnesses in Neurologic Birth Injury Cases**

Experts	NBI Cases	Annual NBI Case Rate	Annual Total Case Rate	Client Mix*
Expert 1	111	8.6	9.1	Excl P
Expert 2	73	5.2	6.6	Predom D
Expert 3	54	3.6	5.6	Excl P
Expert 4	45	3.0	3.8	Predom D
Expert 5	44	3.0	5.2	Excl P
Expert 6	41	2.7	2.7	Predom P
Expert 7	40	3.6	4.7	Excl P
Expert 8	36	2.9	4.0	Predom P
Expert 9	36	2.9	3.7	Excl P
Expert 10	35	2.3	3.2	Predom P
Expert 11	34	2.4	4.0	Predom D
Expert 12	30	2.0	2.5	Predom D
Expert 13	30	2.2	2.6	Balanced
Expert 14	28	2.4	2.7	Predom P
Expert 15	27	2.0	2.0	Predom D
Expert 16	27	2.0	3.7	Predom P
Expert 17	25	3.4	7.0	Predom P
Expert 18	25	1.7	2.7	Predom P
Expert 19	25	1.7	4.3	Balanced
Expert 20	25	2.3	2.7	Predom D
Expert 21	24	2.3	4.7	Excl P
Expert 22	23	1.6	1.9	Excl P
Expert 23	23	1.5	1.8	Predom P
Expert 24	22	1.6	2.0	Predom D
Expert 25	22	1.5	1.7	Balanced

NBI, neurologic birth injury; P, plaintiff; D, defendant; Excl, exclusively for one side; Predom, predominantly (75% or more) for one side; Balanced, balanced mix (less than 75% for one side).

\* Client mix reflects the distribution of NBI cases in which the frequent witnesses acted for the plaintiff or defendant.

**Table 3. Characteristics of Physician Witnesses Who Frequently Testify for Plaintiffs or Defendants**

Characteristic	Plaintiff Witnesses (n=30)	Defendant Witnesses (n=20)	P
Annual total case rate (median)	2.9 [95% CI 2.7–3.7]	1.9 [95% CI 1.6–2.2]	.002*
Average age (y) <sup>†</sup>	57.2 [95% CI 54.2–60.2]	50.8 [95% CI 47.2–54.4]	.007*
Male [n (%)]	27 (90) [95% CI 73.5–97.9]	17 (85) [95% CI 62.1–96.8]	.67 <sup>§</sup>
Subspecialty board certification [n (%)] <sup>  </sup>	11 (38) [95% CI 20.7–57.7]	19 (95) [95% CI 75.1–99.9]	<.001 <sup>§</sup>
Medline publications (median)	5.0 [95% CI 2.1–20.2]	53.5 [95% CI 15.9–97]	.002*

\* Wilcoxon rank sum test.

<sup>†</sup> Data missing for two plaintiff witnesses and one defendant witness.

\* *t* test.

<sup>§</sup> Fisher exact test.

<sup>||</sup> Data missing for one plaintiff witness.

plex malpractice litigation where causation can be unclear. Because we did not measure the quality of experts directly, our findings can provide only indirect evidence in this regard. Nevertheless, the portrait painted by these results—a core group of witnesses testify in many neurologic birth injury cases and frequently square off on consistent sides against one another—deepens concerns that a small and potentially unrepresentative cadre of physicians is setting the standard of care in this field. It also leads to

questions about the quality and objectivity of physician experts who testify in neurologic birth injury litigation.

For many of these witnesses, their modest publication records, lack of subspecialty board certification, and recurrent involvement in litigation work diminish the likelihood that they represent the highest level of current expertise in their fields. In addition, persistent alignment with one side may feed or reflect inappropriate biases regarding injury causation or



**Table 4. National Comparisons of Frequent Witnesses Specializing in Obstetrics-Gynecology**

	Plaintiff Witnesses (n=16)	<i>P</i> *	Defendant Witnesses (n=9)	<i>P</i> *	National Sample (n=842)
Male [n (%)]	16 (100) [95%CI 79.4–100]	<.001†	9 (100) [95% CI 66.4–100]	.01†	488 (58)
Average age (y)	56.3 [95%CI 53.0–59.6]	<.001‡	48.6 [95% CI 44.4–52.8]	.54‡	46.5

\* *P* values each compared to national specialty sample (using Bonferroni correction, statistical significance at *P*<.025).

† Fisher exact test.

‡ *t* test.

standards of perinatal management. It may also tend to harden the perspectives of these witnesses on clinical issues in future cases. Another interpretation is that use of such physicians as experts, particularly on the plaintiff side, indicates how difficult it may be to secure the participation of top experts.

The comparisons of plaintiff and defendant experts showed several systematic differences within the frequent expert group. Defendant witnesses had superior credentials, based on subspecialty certification and academic publication record. Plaintiff witnesses, on the other hand, were older and participated in more cases during the study period—characteristics that suggest greater litigation experience and comfort in the courtroom. Studies have shown that jurors<sup>32</sup> and lawyers<sup>33</sup> consider effectiveness and ease of courtroom communication to be important factors in their assessment of expert witness testimony. Recognition that such characteristics can improve chances of winning may prompt plaintiffs' lawyers to turn to experts who fit this profile.

In response to concerns about the quality of physician expert witnesses and their influence on litigation outcomes, the profession has recently increased self-policing efforts. Professional organizations have issued guidelines for members who act as expert witnesses,<sup>34,35</sup> established peer review committees to scrutinize the accuracy and fairness of members' testimony,<sup>36</sup> and pursued complaints against physicians for giving misleading testimony.<sup>37,38</sup>

State legislatures have also become involved, moving to restrict who may serve in an expert capacity in malpractice cases<sup>39</sup> or mandating neutral evaluation of expert testimony.<sup>40</sup> For example, Kansas requires 50% of a witness's professional time be spent in "clinical practice" if he or she testifies about current medical standards of care.<sup>41</sup> West Virginia set its minimum at 60%.<sup>42</sup> Our findings suggest that such restrictions could have significant effects, especially among plaintiff experts. At a time when physician witnesses may already be scarce,<sup>43</sup> the restrictions may also inhibit plaintiffs' access to them.

Our data have several limitations. First, the jury

verdicts database primarily covers cases that went to trial or formal arbitration or settlement negotiations, but only a minority of malpractice claims advance this far in the process.<sup>44</sup> This data source limitation likely biases the sample toward cases in which experts played a more prominent and time-intensive role. Second, jury verdict reporters do not publish every decision in their jurisdictions. Attempts to measure the proportion of verdicts captured in several places have yielded estimates ranging from 75% to 95% overall,<sup>24,45,46</sup> although the capture of personal injury may be higher than other types of litigation.<sup>24</sup> Both of these limitations imply that the case totals and rates we detected are lower bounds with respect to the litigation involvement of these frequent witnesses.

Third, the case reports rarely specify the experts' role; some may have testified as to injury causation, others on the severity of the plaintiff's disability for purposes of assessing damages. Finally, as noted above, we did not observe or measure the levels of expertise of physician witnesses. The analysis was restricted to potential markers of their quality, as well as basic demographic and professional characteristics.

Knowledge about the etiology of neurologic birth injuries has evolved rapidly over the past two decades. Ideally, courts would hear informed and balanced renditions of this new and expanding knowledge base in evaluating birth injury claims, both to help secure compensation for deserving plaintiffs and to disqualify ineligible ones. The profile of frequent witnesses sketched by our findings underscores doubts about the extent to which this occurs. Closer investigation of physician experts and their testimony is needed to inform emerging policies aimed at ensuring the best medical expertise is brought forth in litigation.

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